

**REMARKS UNDER 37 CFR § 1.111**

**Formal Matters**

Claims 8-29 and 51-57 are pending after entry of the above amendments.

Claims 1-7 and 30-50 have been canceled, without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein.

Claims 8-29 and 51-57 were examined. Claims 8-29 and 51-57 were rejected.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

**The Office Action**

**Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of Macrae et al.)**

In the Official Action of October 19, 2007, claims 8-11, 18-23, 26-29, 51-53 and 54-57 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237.

With regard to claim 8, the Examiner asserted that Infanti teaches a system for manipulating data that includes a library of reusable stencils, means for selecting stencils to be populated with specific information, means for assigning specific data to specific stencils and means for displaying stencils with the assigned specific data. The Examiner admitted that Infanti does not disclose or teach that the data and information is biological data or biological information. However, the Examiner asserted that Macrae et al. teaches a graphical user interface which includes a medical diagram consisting of biological terms, and that it would have been obvious to substitute the data and information represented by Infanti with biological data and information to represent and manipulate a network diagram.

Applicants respectfully traverse. It is respectfully submitted that Macrae et al. graphically merges medical treatments and generates a plurality of graphic images representing a medical treatment plan. The graphic images are presented in a chronological order based in real or virtual time slots, as a flow chart or a chart view, see the Abstract. Accordingly, it is respectfully submitted that Macrae et al.

does not provide a network diagram and that it would not have been obvious to represent the information of Macrae et al. as a network diagram, using Infanti's system, contrary to the Examiner's assertion. A medical treatment method needs to be carried out stepwise, in chronological order, which require a flow chart format, not a network diagram.

Further Applicants have amended claim 8 to recite "a local format infrastructural layer configured to transform specific biological information represented in a text, data or graphical format to one or both of the other text, data or graphical formats that the specific biological information is not already represented in". Support for this amendment can be found, for example, in the specification, paragraph [0076] and throughout the specification. It is respectfully submitted that neither Infanti nor Macrae et al., whether taken alone or in any proper combination, teaches, discloses or suggests this feature. With regard to dependent claim 26, the Examiner asserted that Infanti teaches means for linking the displayed stencils with other sources of biological data from which the specific biological data was extracted, using a local formatting language. Applicants respectfully submit that Infanti does not disclose or suggest the transformation of biological information (or any information) represented as one of text, data, or graphical format to one of the other formats that the data had not been represented in. Rather, page 93 of Infanti specifies only three methods: (1) static copying or movement of data, (2) linking data from its source application, or (3) embedding data into another application document. It is noted that when data is embedded, it still retains its original formatting, as also noted on page 93.

For at least the above reasons, it is respectfully submitted that claim 8 is patentable over Infanti in view of Macrae et al.

Regarding claim 9, the Examiner asserted that Infanti teaches means for connecting common elements of said stencils with assigned specific biological data to display a biological diagram. Applicants respectfully traverse, and refer to the Examiner's comments regarding claim 8 where the Examiner admitted that Infanti does not disclose or teach that the data and information is biological data or biological information. Applicants further respectfully submit that the diagram itself serves as a metaphor or context for integrating disparate data, which is neither disclosed nor suggested by the references.

As to claim 18, it is respectfully submitted that Infanti does not teach means for navigating to data selected from said specific biological data for at least the same reason noted above with regard to claim 9.

With regard to claims 19 and 20, the Examiner asserted that it would have been obvious to have included the use of a comparison tool such as the Diff tool to compare stencils to provide visual

representation of difference in stencil that would lead to updates and managing of stencils in a library. Applicants note that the Examiner did not provide a reference that discloses the “Diff tool”. Accordingly, the Examiner is respectfully requested to provide a reference disclosing the purported teaching of a “Diff tool”, or withdraw this ground of rejection as failing to set forth a prima facie case of obviousness.

Further, Applicants respectfully submit that it would not have been obvious to compare the procedural steps of the flow chart of Macrae et al. with one another to find differences, as the method of Macrae et al. generates the graphic images after analyzing the medical treatment data inputted thereto.

Regarding claim 21, the Examiner referred to pages 113-114 of Infanti and asserted that Infanti teaches means for mapping between said selected stencils containing specific biological data and an existing biological diagram. Applicants respectfully traverse. Although the pages referred to disclose embedding and linking Visio files, there is no disclosure of specific biological data, existing biological diagrams, or mapping between stencils and an existing biological diagram.

Regarding claim 23, Applicants respectfully submit that Infanti clearly fails to teach means for merging stencils with a biological network, or means for displaying said stencils merged with said biological network, contrary to the Examiners assertions. The Examiner admitted that Infanti fails to disclose or teach that the data and information that is biological data or biological information, and it logically follows that Infanti also therefore fails to disclose or teach means for merging stencils with a biological network, or means for displaying said stencils merged with said biological network.

Likewise, with regard to claim 26, it is respectfully submitted that Infanti clearly fails to teach means for linking the displayed stencils with other source of biological data. It is further respectfully submitted that Infanti fails to teach use of a local formatting language as claimed, for reasons already noted above.

As to claim 29, it is respectfully submitted that pages 63 and 64 clearly do not disclose overlaying annotations on a biological diagram, contrary to the Examiner’s assertions.

As to claim 51, it is respectfully submitted that neither Infanti nor Macrae et al. teaches or discloses graphical elements comprising biological semantics representative of a particular type of biological entity or interaction. The Examiner has already admitted that Infanti does not disclose or teach that the data and information that is biological data or biological information. Macrae et al. also fails to disclose graphical elements only provides comprising biological semantics representative of a particular type of biological entity or interaction, and the Examiner has not asserted that Macrae et al. does teach or disclose such.

As to claim 52, it is respectfully submitted that neither Infanti, nor Macrae et al., whether taken alone or in any proper combination, teaches, discloses or suggests representing a visual grammar in a local format, for reasons already noted above.

Regarding claim 53, Applicants traverse the Examiner's assertion that Infanti teaches said slots are filled with specific biological information, as this is contrary to the Examiner's earlier admission that Infanti does not disclose or teach that the data and information is biological data or biological information. It is further respectfully submitted that Infanti does not use a local format as claimed, for reasons noted above, and that pages 63-64 of Infanti do not disclose automatically adding biological information to a local format, but only disclose entering text into a shape. There is no disclosure of conversion of the text to a local format.

Regarding claim 54, it is respectfully submitted that neither Infanti nor Macrae et al. disclose, suggest, or pertain to stencils existing at multiple levels of abstraction, ranging from molecular interaction to higher-level biological concepts.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 8-11, 18-23, 26-29, 51-53 and 54-57 under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237, as being inappropriate.

**Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of Macrae et al. and Flowtronex)**

Claims 12-17 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237 as applied to claim 8 above, and further in view of Flowtronex - Apprentice Systems – Microsoft Case Study (August 2001).

Regarding claim 12, the Examiner admitted that Infanti does not teach data that is biological data or designing and associating rules with stencils. The Examiner asserted that Macrae et al. teaches a medical diagramming user interface and that Flowtronex teaches an overlay onto Visio that designs and applies rules to Visio shapes. The Examiner further asserted that it would have been obvious to combine the system of diagramming biological data of Infanti in view of Macrae et al. with the designing and applying of rules to Visio master shapes to eliminate manual processing by creating an automatic process.

Applicants respectfully traverse. For reasons provided above with regard to claim 8, it is respectfully submitted that it would not have been obvious to combine Macrae et al. with Infanti in the manner described by the Examiner. Further, it is respectfully submitted that Flowtronex fails to teach or suggest a local format infrastructural layer configured to transform specific biological information represented in a text, data or graphical format to one or both of the other text, data or graphical formats that the specific biological information is not already represented in and therefore fails to make up for the deficiencies of Infanti and Macrae et al. in meeting claim 8. Since claims 12-17 depend from claim 8, it is respectfully submitted that these claims are allowable over the applied art of record, for at least the same reasons that claim 8 patentable defines over the applied art of record.

With regard to claim 15 it is respectfully submitted that none of the applied references suggest rule checking rules against a pre-existing biological diagram. Likewise, none of the references disclose or suggest rule checking rules against experimental data, as recited in claim 16, as none of the references cited even pertain to treatment of experimental data. The Examiner asserted that it would have been obvious to include experimental data in the system of Infanti in view of Macrae et al. Applicants respectfully disagree. It is respectfully submitted that Macrae et al. is directed to merging medical protocols, that is, instructions for medical treatments. As such, Macrae et al.'s methods do not involve analysis of experimental data, but rather, analysis of medical protocols to merge the same.

Regarding claim 17, the Examiner indicated that Flowtronex teaches an overlay onto Visio that designs and assigns rules to Visio shapes. However, claim 17 depends from claim 12. Claim 12 recites means for designing and associating rules with said stencils. Claim 17 further recites means for overlaying results of rule checking on a network diagram. It is respectfully submitted that Flowtronex lacks any disclosure of overlaying results of rule checking on anything, much less a network diagram. It is further respectfully submitted that Infanti and Macrae et al. also fail to disclose this feature.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 12-17 under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237 as applied to claim 8 above, and further in view of Flowtronex - Apprentice Systems – Microsoft Case Study (August 2001), as being inappropriate.

**Claims Rejected Under 35 U.S.C. Section 103(a) (Infanti in view of Macrae et al. and Artymuik et al.)**

Claims 24-25 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237 as applied to claim 8 above, and further in view of Artymuik et al., "The Use of Graph Theoretical Methods for the Comparison of the Structures of Biological Macromolecules, 1995).

The Examiner asserted that it would have been obvious to include the use of graph theoretic methods to compare a plurality of stencils for examining and comparing of macromolecular structures.

Applicants respectfully submit that Artymuik et al. does nothing to make up for the deficiencies of deficiencies of Infanti and Macrae et al. in meeting claim 8, since Artymuik et al. also fails to disclose or suggest a local format infrastructural layer configured to transform specific biological information represented in a text, data or graphical format to one or both of the other text, data or graphical formats that the specific biological information is not already represented in. Further, since claims 24-25 depend from claim 8, it is respectfully submitted that these claims are allowable over the applied art of record, for at least the same reasons provided above with regard to claim 8.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 24-25 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002) in view of Macrae et al., U.S. Patent No. 5,826,237 as applied to claim 8 above, and further in view of Artymuik et al., "The Use of Graph Theoretical Methods for the Comparison of the Structures of Biological Macromolecules, 1995), as being inappropriate.

**New Claim 58**

New claim 58 has been provided above. Support for claim 58 can be found in claim 8 (prior to the above amendment of claim 8) and claim 51. It is respectfully submitted that none of the art of record discloses teaches or suggests as system as claimed, wherein each stencil in said library of re-usable stencils comprises graphical elements representing entities and at least one interaction; each said graphical element comprising biological semantics representative of a particular type of biological entity or interaction. Accordingly, the Examiner is respectfully requested to indicate the allowance of claim 58 in the next Official Action.

**Conclusion**

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at 408-736-3554.

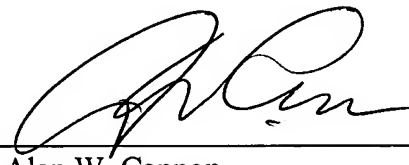
The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10030635-1.

Respectfully submitted,

Date: \_\_\_\_\_

2/19/08

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